## REMARKS

This is a full and timely response to the outstanding non-final Office Action mailed June 13, 2005. Upon entry of the amendments in this response, claims 1 – 64 remain pending. Reconsideration and allowance of the application and presently pending claims are respectfully requested.

## I.    Rejections Under 35 U.S.C. §102

A proper rejection of a claim under 35 U.S.C. §102 requires that a single cited art reference disclose each element of the claim. *See, e.g., W.L. Gore & Assoc., Inc. v. Garlock, Inc.,* 721 F.2d 1540, 220 USPQ 303, 313 (Fed. Cir. 1983).

### A.    Claim 1 is Patentable Over *Pandya*

The Office Action indicates that claim 1 stands rejected under 35 U.S.C. §102(e) as allegedly being anticipated by U.S. Patent Number 6,671,724 (*"Pandya"*). Applicants respectfully traverse this rejection on the grounds that *Pandya* does not disclose, teach, or suggest all of the claimed elements. Claim 1 recites:

> A method of providing network access across a shared communications medium in a downstream direction towards competing users, comprising the steps of:
> (a) monitoring network access usage by each user during a time interval;
> (b) *forecasting downstream network access usage by each user during a future time interval based on said monitored network access usage by each user;* and
> (c) based on said forecasting, allocating network access to each user on a per user basis for a future time interval.

Applicant submits that *Pandya* fails to disclose, teach, or suggest at least a "method of providing network access across a shared communications medium in a downstream direction towards competing users, comprising the steps of... *forecasting downstream network access usage by each user during a future time interval based on said monitored network access usage by each user*" as recited in claim 1. The Office Action asserts that *Pandya* discloses that

> based on monitored usage, UB, forecasting that a user will need more network access, as in step S6 wherein it is determined that the used bandwidth and maximum allocated bandwidth are approximately equal with the fair share bandwidth being more than the maximum allocated bandwidth, or forecasting that a user will need less network access, as in step S8 where it is determined that the used bandwidth is less than the maximum allocated bandwidth. (OA p. 3, beginning line 5).

However, Applicant respectfully disagrees with this analysis. More specifically, *Pandya* discloses "...certain allocated bandwidths AB are modified if the sum of all the allocated bandwidths $AB_{total}$ exceeds the sum of the configured bandwidths $CB_{total}$... Second, if there are any agents for which $AB < CB$ and $UB \cong CB$, the allocation for those agents is modified... Third, if there are any agents reporting bandwidth usage UB that is less than their allocation AB... then the allocation for such an agent is reduced for the upcoming period..." (column 16, beginning at line 33). As clearly illustrated in this passage, *Pandya* appears to suggest that modifying bandwidth allocation is based on *previous utilized bandwidth (UB)*.

Additionally, nowhere in *Pandya* is there any mention of "forecasting." A word search reveals that the terms "forecast," "forecasting," "project," and "predict" (as well as other similar terms) are not present in *Pandya*. Applicants submit that *Pandya* fails to disclose, teach, or suggest at least "*forecasting downstream network access usage by each user during a future*

*time interval based on said monitored network access usage by each user*" as recited in claim 1.

For at least this reason claim 1 is allowable over *Pandya*.

## B. Claim 39 is Patentable Over *Pandya*

The Office Action indicates that claim 39 stands rejected under 35 U.S.C. §102(e) as allegedly being anticipated by U.S. Patent Number 6,671,724 ("*Pandya*"). Applicants respectfully traverse this rejection on the grounds that *Pandya* does not disclose, teach, or suggest all of the claimed elements. Claim 39 recites:

> A method of providing network access across a shared communications medium between competing users, comprising the steps of:
> (a) monitoring network access usage by each user during a time interval;
> (b) forecasting upstream and downstream network access usage by each user during a future time interval based on said monitored network access usage by each user; and
> (c) based on said forecasted network access usage, allocating network access to each user for the future time interval.

Applicant submits that *Pandya* fails to disclose, teach, or suggest at least a "method of providing network access across a shared communications medium in a downstream direction towards competing users, comprising the steps of... *forecasting downstream network access usage by each user during a future time interval based on said monitored network access usage by each user*" as recited in claim 39. The Office Action asserts that *Pandya* discloses that

> based on monitored usage, UB, forecasting that a user will need more network access, as in step S6 wherein it is determined that the used bandwidth and maximum allocated bandwidth are approximately equal with the fair share bandwidth being more than the maximum allocated bandwidth, or forecasting that a user will need less network access, as in step S8 where it is determined that the used bandwidth is less than the maximum allocated bandwidth. (OA p. 4, beginning line 5).

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However, Applicant respectfully disagrees with this analysis. More specifically, *Pandya* discloses "...certain allocated bandwidths $AB$ are modified if the sum of all the allocated bandwidths $AB_{total}$ exceeds the sum of the configured bandwidths $CB_{total}$... Second, if there are any agents for which $AB < CB$ and $UB \cong CB$, the allocation for those agents is modified... Third, if there are any agents reporting bandwidth usage $UB$ that is less than their allocation $AB$... then the allocation for such an agent is reduced for the upcoming period..." (column 16, beginning at line 33). As clearly illustrated in this passage, *Pandya* appears to suggest that modifying bandwidth allocation is based on ***previous utilized bandwidth*** (UB).

Additionally, nowhere in *Pandya* is there any mention of "forecasting." A word search reveals that the terms "forecast," "forecasting," "project," and "predict" (as well as other similar terms) are not present in *Pandya*. Applicants submit that *Pandya* fails to disclose, teach, or suggest at least "***forecasting downstream network access usage by each user during a future time interval based on said monitored network access usage by each user***" as recited in claim 39. For at least this reason, claim 39 is allowable over *Pandya*.

## C. Claim 2 – 4, 6, 8 – 11, 13, 15 – 25, 28 – 29, 31, 33 – 37, 40, 42 – 54, 57 – 59, 61, and 62 are is Patentable Over *Pandya*

In addition, dependent claims 2 – 4, 6, 8 – 11, 13, 15 – 25, 28 – 29, 31, and 33 – 37 are believed to be allowable for at least the reason that these claims depend from allowable independent claim 1. Further, dependent claims 40, 42 – 54, 57 – 59, 61, and 62 are believed to be allowable for at least the reason that they depend from allowable independent claim 39. *In re Fine, Minnesota Mining and Mfg.Co. v. Chemque, Inc.*, 303 F.3d 1294, 1299 (Fed. Cir. 2002).

## II.    Rejections Under 35 U.S.C. §103

In order for a claim to be properly rejected under 35 U.S.C. §103, the teachings of the cited art reference must suggest all features of the claimed invention to one of ordinary skill in the art. *See, e.g., In re Dow Chemical,* 837 F.2d 469, 5 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1988); *In re Keller,* 642 F.2d 413, 208 U.S.P.Q. 871, 881 (C.C.P.A. 1981). Further, "[t]he PTO has the burden under section 103 to establish a prima facie case of obviousness. It can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references." *In re Fine, Minnesota Mining and Mfg.Co. v. Chemque, Inc.,* 303 F.3d 1294, 1299 (Fed. Cir. 2002).

### A.    Claims 5 and 7 are Patentable Over *Pandya* in View of *Barnes*

The Office Action indicates that claims 5 and 7 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over *Pandya* in view of U.S. patent number 6,59,486 ("*Barnes*"). Applicants respectfully traverse this rejection for at least the reason that *Pandya* in view of *Barnes* fails to disclose, teach, or suggest all of the elements of claims 5 and 7. More specifically, dependent claims 5 and 7 are believed to be allowable for at least the reason that these claims depend from allowable independent claim 1. *In re Fine, Minnesota Mining and Mfg.Co. v. Chemque, Inc.,* 303 F.3d 1294, 1299 (Fed. Cir. 2002).

### B.    Claims 12, 38, and 60 are Patentable Over *Pandya* in View of *Hanko*

The Office Action indicates that claims 12, 38, and 60 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over *Pandya* in view of U.S. patent number 6,438,141

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("*Hanko*"). Applicants respectfully traverse this rejection for at least the reason that *Pandya* in view of *Hanko* fails to disclose, teach, or suggest all of the elements of claim 12, 38, and 60. More specifically, dependent claims 12 and 38 are believed to be allowable for at least the reason that these claims depend from allowable independent claim 1. Dependent claim 60 is believed to be allowable for at least the reason that this claim depends from allowable independent claim 39. *In re Fine, Minnesota Mining and Mfg.Co. v. Chemque, Inc.*, 303 F.3d 1294, 1299 (Fed. Cir. 2002).

### C.    Claims 14, 63, and 64 are Patentable Over *Pandya* in view of *Farah*

#### 1.    Claim 14 is Patentable Over *Pandya* in view of *Farah*

The Office Action indicates that claim 14 stands rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over *Pandya* in view of U.S. patent number 6,567,418 ("*Farah*"). Applicants respectfully traverse this rejection for at least the reason that *Pandya* in view of *Farah* fails to disclose, teach, or suggest all of the elements of claim 14. More specifically, dependent claim 14 is believed to be allowable for at least the reason that this claim depends from allowable independent claim 1. *In re Fine, Minnesota Mining and Mfg.Co. v. Chemque, Inc.*, 303 F.3d 1294, 1299 (Fed. Cir. 2002).

#### 2.    Claim 63 is Patentable Over *Pandya* in view of *Farah*

The Office Action indicates that claim 63 stands rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over *Pandya* in view of U.S. patent number 6,567,418 ("*Farah*"). Applicants respectfully traverse this rejection for at least the reason that *Pandya* in view of *Farah* fails to disclose, teach, or suggest all of the elements of claim 63. Claim 63 recites:

A method of providing network access across a shared communications medium of a Cable Network between competing users, comprising the steps of:

(a) monitoring network access usage by each user for a time interval;

(b) *based on said monitoring, forecasting the number of logical data units (LDUs) of each user that will be transmitted over a future time interval*; and

(c) based on said forecasting, allocating network access available to each user for the future time interval.

Applicant submits that *Pandya* fails to disclose, teach, or suggest at least a *"method of providing network access across a shared communications medium of a Cable Network between competing users, comprising the steps of... based on said monitoring, forecasting the number of logical data units (LDUs) of each user that will be transmitted over a future time interval"* as recited in claim 63. The Office Action asserts that *Pandya* discloses that

based on monitored usage, UB, forecasting that a user will need more network access, as in step S6 wherein it is determined that the used bandwidth and maximum allocated bandwidth are approximately equal with the fair share bandwidth being more than the maximum allocated bandwidth, or forecasting that a user will need less network access, as in step S8 where it is determined that the used bandwidth is less than the maximum allocated bandwidth. (OA p. 14, beginning line 2).

However, Applicant respectfully disagrees with this analysis. More specifically, *Pandya* discloses "...certain allocated bandwidths AB are modified if the sum of all the allocated bandwidths $AB_{total}$ exceeds the sum of the configured bandwidths $CB_{total}$... Second, if there are any agents for which $AB < CB$ and $UB \cong CB$, the allocation for those agents is modified... Third, if there are any agents reporting bandwidth usage UB that is less than their allocation AB... then the allocation for such an agent is reduced for the upcoming period..." (column 16,

beginning at line 33). As clearly illustrated in this passage, *Pandya* appears to suggest that

modifying bandwidth allocation is based on *previous utilized bandwidth* (UB).

Additionally, nowhere in *Pandya* is there any mention of "forecasting." A word search

reveals that the terms "forecast," "forecasting," "project," and "predict" (as well as other similar

terms) are not present in *Pandya*. Applicants submit that *Pandya* fails to disclose, teach, or

suggest at least *"based on said monitoring, forecasting the number of logical data units*

*(LDUs) of each user that will be transmitted over a future time interval"* as recited in claim 63.

For at least this reason, claim 63 is allowable over *Pandya*.


### 3.     Claim 64 is Patentable Over *Pandya* in view of *Farah*

The Office Action indicates that claim 64 stands rejected under 35 U.S.C. 103(a) as

allegedly being unpatentable over *Pandya* in view of U.S. patent number 6,567,418 (*"Farah"*).

Applicants respectfully traverse this rejection for at least the reason that *Pandya* in view of *Farah*

fails to disclose, teach, or suggest all of the elements of claim 64.

> A method of providing network access across a shared communications
> medium of a Cable Network between competing users, comprising the
> steps of:
>         (a) monitoring network access usage requested by each user for a
> time interval;
>         (b) *based on said monitoring, forecasting the number of logical
> data units (LDUs) that will be requested by each user over a future time
> interval*; and
>         (c) based on said forecasting, allocating network access available
> to each user for the future time interval.

Applicant submits that *Pandya* fails to disclose, teach, or suggest at least a "method of

providing network access across a shared communications medium of a Cable Network between

competing users, comprising the steps of ... *based on said monitoring, forecasting the number*

*of logical data units (LDUs) that will be requested by each user over a future time interval...*"

as recited in claim 64. The Office Action asserts that *Pandya* discloses that

> based on monitored usage, UB, forecasting that a user will need more
> network access, as in step S6 wherein it is determined that the used
> bandwidth and maximum allocated bandwidth are approximately equal
> with the fair share bandwidth being more than the maximum allocated
> bandwidth, or forecasting that a user will need less network access, as in
> step S8 where it is determined that the used bandwidth is less than the
> maximum allocated bandwidth. (OA p. 15, beginning line 1).

However, Applicant respectfully disagrees with this analysis. More specifically, *Pandya*

discloses "...certain allocated bandwidths AB are modified if the sum of all the allocated

bandwidths $AB_{total}$ exceeds the sum of the configured bandwidths $CB_{total}$... Second, if there are

any agents for which $AB < CB$ and $UB \cong CB$, the allocation for those agents is modified...

Third, if there are any agents reporting bandwidth usage UB that is less than their allocation

AB... then the allocation for such an agent is reduced for the upcoming period..." (column 16,

beginning at line 33). As clearly illustrated in this passage, *Pandya* appears to suggest that

modifying bandwidth allocation is based on *previous utilized bandwidth* (UB).

Additionally, nowhere in *Pandya* is there any mention of "forecasting." A word search

reveals that the terms "forecast," "forecasting," "project," and "predict" (as well as other similar

terms) are not present in *Pandya*. Applicants submit that *Pandya* fails to disclose, teach, or

suggest at least *"based on said monitoring, forecasting the number of logical data units*

*(LDUs) that will be requested by each user over a future time interval"* as recited in claim 64.

For at least this reason, claim 64 is allowable over *Pandya*.

**D.    Claims 26 and 55 are Patentable Over _Pandya_ in View of _Gemar_**

The Office Action indicates that claims 26 and 55 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over _Pandya_ in view of U.S. patent number 6,483,839 ("_Gemar_"). Applicants respectfully traverse this rejection for at least the reason that _Pandya_ in view of _Gemar_ fails to disclose, teach, or suggest all of the elements of claim 26 and 55. More specifically, dependent claim 26 is believed to be allowable for at least the reason that this claim depends from allowable independent claim 1. Further, dependent claim 55 is believed to be allowable for at least the reason that this claim depends from allowable independent claim 39. _In re Fine, Minnesota Mining and Mfg.Co. v. Chemque, Inc._, 303 F.3d 1294, 1299 (Fed. Cir. 2002).


**E.    Claims 27 and 56 are Patentable Over _Pandya_ in View of _Hou_**

The Office Action indicates that claims 27 and 56 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over _Pandya_ in view of U.S. patent number 6,324,184 ("_Hou_"). Applicants respectfully traverse this rejection for at least the reason that _Pandya_ in view of _Hou_ fails to disclose, teach, or suggest all of the elements of claim 27 and 56. More specifically, dependent claim 27 is believed to be allowable for at least the reason that this claim depends from allowable independent claim 1. Further, dependent claim 56 is believed to be allowable for at least the reason that this claim depends from allowable independent claim 39. _In re Fine, Minnesota Mining and Mfg.Co. v. Chemque, Inc._, 303 F.3d 1294, 1299 (Fed. Cir. 2002).


**F.    Claims 32 and 41 are Patentable Over _Pandya_ in View of _Huang_**

The Office Action indicates that claims 32 and 41 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over _Pandya_ in view of U.S. patent number 6,151,852
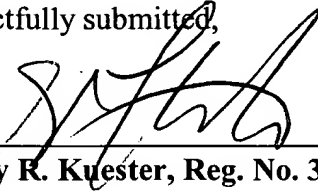
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("*Huang*"). Applicants respectfully traverse this rejection for at least the reason that *Pandya* in view of *Huang* fails to disclose, teach, or suggest all of the elements of claims 32 and 41. More specifically, dependent claim 32 is believed to be allowable for at least the reason that this claim depends from allowable independent claim 1. Further, dependent claim 41 is believed to be allowable for at least the reason that this claim depends from allowable independent claim 39. *In re Fine, Minnesota Mining and Mfg.Co. v. Chemque, Inc.*, 303 F.3d 1294, 1299 (Fed. Cir. 2002).

## CONCLUSION

In light of the foregoing amendments and for at least the reasons set forth above, Applicants respectfully submit that all objections and/or rejections have been traversed, rendered moot, and/or accommodated, and that the now pending claims are in condition for allowance. Favorable reconsideration and allowance of the present application and all pending claims are hereby courteously requested.

Any other statements in the Office Action that are not explicitly addressed herein are not intended to be admitted. In addition, any and all findings of inherency are traversed as not having been shown to be necessarily present. Furthermore, any and all findings of well-known art and official notice, or statements interpreted similarly, should not be considered well known since the Office Action does not include specific factual findings predicated on sound technical and scientific reasoning to support such conclusions. If, in the opinion of the Examiner, a telephonic conference would expedite the examination of this matter, the Examiner is invited to call the undersigned attorney at (770) 933-9500.

Respectfully submitted,

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